

City of Issaquah Vision of Sustainability Discussion

Purpose:

The purpose of this document is to discuss how the development and construction of Issaquah School District, High School No. 4 and Elementary School No. 17 will address the City's Vision of Sustainable Development.

Site Description:

Issaquah School District, High School No. 4 and Elementary School No. 17 sit on 40.79 acres of the former Providence Heights College. The site perimeter is heavily wooded with a large clearing in the middle. This property fronts 228th Ave SE and borders Issaquah and Sammamish. In January 2020, the site was rezoned to Community Facilities – Facility (CF-F), which is compatible with public school zoning. The neighboring Providence Point retirement community borders the property to north, west and south and is a mix of single-family residences, apartments and condominiums with several larger scale community facilities such as a Clubhouse, Indoor Pool, Café, Apartment building, Fitness Center and tennis courts. Beyond Providence Point, lies single-family residential developments with retail and Pine Lake Middle School to the north.

Main access to the schools, off 228th, is from a new entry boulevard that meanders through the trees, climbs up roughly 100' of elevation, with terraced retaining walls on either side, and arrives at the top of the campus at an intersection with baseball and softball fields to the right, a drive to the left to the High School for parent drop-off, student and staff parking, or straight to the Elementary School. School buses continue straight (west) to serve the Elementary School and south student entry of the High School. This main boulevard is defined by plantings (both of seasonal interest and buffer character), pedestrian sidewalks, pedestrian scale site lighting and vistas to the schools.

Washington Sustainable Schools Protocol (WSSP) is the State's adopted green building standard for school buildings and is similar to a LEED silver certification. The high school has been designed to meet, and exceed, (WSSP) standards and, though the elementary school is not eligible for State funding, it follows many of the same sustainable protocols. The design team, owner and design build contractor participated in several sustainability sessions that informed decisions regarding energy efficient HVAC and electrical systems, building orientation, environmentally friendly building materials and storm water management.

Sustainable Development:

The City of Issaquah is a rapidly growing community. With growth comes the need for future expansion to infrastructure as well as public facilities. While the expansion for public facilities is needed, it is important to maintain the sustainability of the environment surrounding us. The development of the high school and elementary school plan has taken sustainability into account in all aspects of the design.

Site Management: The existing topography and landscape on the site is steep and wooded around the perimeter with a large, relatively flat clearing in the location of the former Providence Heights College. The college has been removed leaving a vacant open area central to the site. In order to minimize disturbance to the existing land and maintain the natural topography of the site, the high school was sited on the large clearing, spanning east to west to maximize optimal daylighting into classrooms and is three stories in height to minimize the building footprint. Proposed building features, such as retaining walls, athletic fields, access roads and buildings, will complement the natural topography by varying in elevation. Site grading has been designed to minimize the amount of excavation and earthwork needed to construct the project. The site grading attempts to balance the amount of soil materials exported/imported from the site. These strategies minimize the amount of construction equipment and material transport required for site construction.

On-site stormwater management for the site will be done using underground detention facilities that will discharge stormwater at a controlled rate to treatment facilities. The treatment facilities used around the site will be OldCastle BioPods which will provide enhanced phosphorus treatment to all stormwater runoff found on the project site. Using the combination of flow-controlled detention facilities in coordination with the BioPod treatment facilities will effectively minimize the chance of pollution generating runoff from leaving our site. The stormwater facility has been designed to match the existing runoff flows of the prehistoric site. By doing this we are not only improving the quality of water that is leaving the site but also reducing the amount of downstream runoff produced and essentially returning this section of environment to its natural hydrologic state. There are multiple bioswales and natural water conveying channels found on site. Using swales to convey water gives stormwater a chance to infiltrate into existing soils if possible while also providing a level of treatment to the runoff. As a conservative measure, this level of treatment has not been incorporated within the treatment calculations.

Energy:

One of the first energy efficient design decisions was to orient each school spanning east to west to maximize daylighting into classrooms, then provide operable windows and solar shading devices on south facing glass facades for passive cooling. Then specifying an energy efficient Variable Air Volume (VAV) mechanical systems with rooftop air handling units, allows us to free up the site for outdoor learning opportunities. Energy efficient LED lighting and motion detection daylighting controls are a couple of ways the project utilizes smart, energy efficient electrical solutions. Our exterior building material choices also aid in energy efficiency, for example a white, thermoplastic polyolefin (TPO) roofing material will minimize the heat absorption on the roof and will minimize unnecessary cooling. Roofs are one of the greatest contributors to heat island effect. The exterior walls are a vented rainscreen material of recycled content. At the end of construction, the building will undergo a system commissioning review to verify all mechanical systems are operating efficiently. While the building is operational, ISD will monitor the lighting, plug loads and HVAC system for maximum energy efficiency.

Water: Water conservation will be achieved both through controlled site irrigation and with low flow interior fixtures.

Sustainable Materials: Landscaping elements will be directly generated from the project site. Boulders, stumperies, and raw timber will be reused. The rocks, boulders, and stumperies will be placed throughout the site to create an environment to represents the surrounding wooded perimeter and region.

Architecturally, both schools are three story in height to minimize their footprint and site impacts. Distinct programmatic features, such as linear classroom wings, large glassy commons, gymnasiums and libraries allow the building massing to be varied which also creates intimate outdoor play and gathering spaces. Similar in design vernacular, both schools provide covered entrances into lofty glass lobbies. Many of the specified building materials will be regional, locally sourced. This reduces potential carbon footprint often used to transport materials. In addition, much of the interior, wood paneling will be on-site harvested wood. And much of the interior materials are specified as low-emitting finishes. This helps provide healthy indoor air quality. Connections to the outdoors is important and purposeful providing direct access to playgrounds, exterior educational spaces and athletic plazas. Numerous studies have shown that exposure to natural daylight in classrooms, operable windows throughout and direct connections outdoors are key factors to promoting a healthy learning environment.

Transportation: The nearest public transit bus stop is located 770 feet north of the proposed access to the site. Also located to the north, approximately 3,850 feet from the access driveway, is a park and ride as well as retail facilities such as grocery stores and banks. The development is proposing to provide the minimum 667 parking stalls required for the site. By providing the minimum we are encouraging the use of the public transportation systems as well as the public-school bus system. The schools have been designed to include ample bus parking which will allow a large amount of the student populations to travel by bus. Bike racks are proposed in multiple areas of the site. A new bike lane will be added as part of the frontage improvements on 228th to encourage with use of bicycle commuting in the area. Rough in infrastructure for electrical vehicle charging systems are provided in parking areas throughout the site to provide electric vehicle charging systems in the future as budget allows.

Conclusion:

The development and design of Issaquah School District, High School No. 4 and Elementary School No. 17 has held sustainability as a top priority during the design process. It is our opinion that the sustainable procedures, materials, and practices that will be a part of this development will have a positive lasting effect on the community and will enhance the overall sustainable outlook within the City of Issaquah. We believe that the City's Vision of Sustainability has been achieved by the proposed design.